

MedPanel

Test case 1:

Clinical Notes

45-year-old female. Sudden chest pain radiating to left arm, shortness of breath. History of hypertension and high cholesterol. Smoker for 20 years. ECG changes noted

MedPanel Diagnostic Report

PRIMARY DIAGNOSIS

Acute Coronary Syndrome (ACS)

DIFFERENTIAL DIAGNOSES

1. Unstable Angina
2. Aortic Dissection
3. Pulmonary Embolism (PE)
4. Pericarditis
5. Esophageal Rupture
6. Tension Pneumothorax

PANEL AGREEMENT SCORE

90/100

RED FLAGS

- Sudden onset of chest pain
- Radiation of pain to the left arm
- Hypertension
- High Cholesterol
- Smoking
- Age

RECOMMENDED NEXT STEPS

- Electrocardiogram (ECG)
- Cardiac enzymes (Troponin)
- Chest X-ray
- Consider CT angiography of the chest to rule out aortic dissection
- Assess for signs and symptoms of pulmonary embolism (e.g., shortness of breath, pleuritic chest pain)

ESCALATION TO HUMAN DOCTOR

REQUIRED: The DEVIL'S ADVOCATE raises concerns about missing life-threatening conditions like aortic dissection and pulmonary embolism, given the patient's presentation and risk factors. A human review is needed to ensure a comprehensive evaluation.

💬 PATIENT SUMMARY

The patient presents with chest pain, potentially indicating a heart problem. We need to quickly rule out serious conditions like heart attack or aortic dissection to provide the best care.

Panel Trace (JSON)

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[  
  {  
    "agent": "Radiologist",  
    "output": {  
      "suspected_conditions": [],  
      "note": "No image provided \u2014 skipping radiology analysis"  
    }  
  },  
  {  
    "agent": "Internist",  
    "output": {  
      "differential_diagnoses": [  
        "Acute Coronary Syndrome (ACS)",  
        "Unstable Angina",  
        "Aortic Dissection"  
      ],  
      "risk_factors": [  
        "Hypertension",  
        "High Cholesterol",  
        "Smoking",  
        "Age"  
      ],  
      "urgency": "urgent",  
      "confidence": 0.95  
    }  
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  {  
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    "abstracts_retrieved": 4  
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  {  
    "agent": "Devil's Advocate",  
    "output": {  
      "missed_diagnoses": [  
        "Pulmonary Embolism",  
        "Aortic Dissection"  
      ]  
    }  
  }]
```

"Pulmonary Embolism (PE)",
"Aortic Dissection",
"Pericarditis",
"Esophageal Rupture",
"Tension Pneumothorax"
],
"dangerous_alternatives": [
"Aortic Dissection",
"Esophageal Rupture",
"Tension Pneumothorax",
"Massive Pulmonary Embolism"
],
"challenge_statement": "The focus on ACS and unstable angina may overshadow the possibility of a life-threatening condition like aortic dissection, especially given the sudden onset of chest pain and radiation to the left arm.",
"requires_human_review": true
}
},
{
"agent": "Orchestrator",
"output": {
"primary_diagnosis": "Acute Coronary Syndrome (ACS)",
"differential_diagnoses": [
"Unstable Angina",
"Aortic Dissection",
"Pulmonary Embolism (PE)",
"Pericarditis",
"Esophageal Rupture",
"Tension Pneumothorax"
],
"panel_agreement_score": 90,
"red_flags": [
"Sudden onset of chest pain",
"Radiation of pain to the left arm",
"Hypertension",
"High Cholesterol",
"Smoking",
"Age"
],
"recommended_next_steps": [
"Electrocardiogram (ECG)",
"Cardiac enzymes (Troponin)",
"Chest X-ray",
"Consider CT angiography of the chest to rule out aortic dissection",

```
        "Assess for signs and symptoms of pulmonary embolism (e.g., shortness of breath, pleuritic chest pain)"  
    ],  
    "escalate_to_human": true,  
    "escalation_reason": "The DEVIL'S ADVOCATE raises concerns about missing life-threatening conditions like aortic dissection and pulmonary embolism, given the patient's presentation and risk factors. A human review is needed to ensure a comprehensive evaluation.",  
    "patient_summary": "The patient presents with chest pain, potentially indicating a heart problem. We need to quickly rule out serious conditions like heart attack or aortic dissection to provide the best care."  
}
```

}

}

]

Test case 2 :

Clinical Notes

32-year-old male. Severe headache, photophobia, neck stiffness, fever 39.5°C. Petechial rash on lower limbs. Symptoms started 12 hours ago.

MedPanel Diagnostic Report

```
{  
    "primary_diagnosis": "Rocky Mountain Spotted Fever (RMSF)",  
    "differential_diagnoses": [  
        "Meningitis (bacterial)",  
        "Viral Meningitis",  
        "Early stages of disseminated intravascular coagulation (DIC) secondary to sepsis or other underlying condition",  
        "Severe sepsis with septic shock, potentially from a source not immediately apparent",  
        "Acute promyelocytic leukemia (APL) with coagulopathy and petechiae"  
    ],  
    "panel_agreement_score": 95,  
    "red_flags": [  
        "Petechial rash",  
        "Fever",  
        "Headache",  
        "Photophobia",  
        "Neck stiffness"  
    ],  
    "recommended_next_steps": [  
        "Initial laboratory tests including complete blood count, blood culture, and coagulation profile."],  
    "final_diagnosis": "Rocky Mountain Spotted Fever (RMSF)"  
}
```

"Start doxycycline immediately, even before confirmatory test results are available.",
"Obtain blood cultures.",
"Obtain a complete blood count (CBC) with differential.",
"Obtain a coagulation panel.",
"Consider a lumbar puncture (LP) if there are no contraindications and the clinical picture warrants it, but do not delay doxycycline administration.",
"Consider a PCR test for RMSF.",
"Monitor for signs of DIC or worsening sepsis."
],
"escalate_to_human": true,
"escalation_reason": "The combination of headache, photophobia, neck stiffness, fever, and petechial rash raises concern for a life-threatening condition that may be missed if the focus is solely on bacterial meningitis or RMSF. The DEVIL'S ADVOCATE concerns highlight the potential for missed diagnoses and dangerous alternatives, necessitating human review.",
"patient_summary": "The patient presents with symptoms suggestive of a serious infection, including fever, headache, and neck stiffness.

Panel Trace (JSON)

```
[  
 {  
   "agent": "Radiologist",  
   "output": {  
     "suspected_conditions": [],  
     "note": "No image provided \u2014 skipping radiology analysis"  
   }  
 },  
 {  
   "agent": "Internist",  
   "output": {  
     "differential_diagnoses": [  
       "Meningitis (bacterial)",  
       "Rocky Mountain Spotted Fever (RMSF)",  
       "Viral Meningitis"  
     ],  
     "risk_factors": [  
       "Travel to endemic areas for RMSF",  
       "Exposure to ticks or mites",  
       "History of tick bites"  
     ],  
     "urgency": "urgent",  
     "confidence": 0.95  
   }  
 }
```

```
},
{
  "agent": "Evidence Reviewer",
  "abstracts_retrieved": 4
},
{
  "agent": "Devil's Advocate",
  "output": {
    "missed_diagnoses": [
      "Early stages of disseminated intravascular coagulation (DIC) secondary to sepsis or other underlying condition",
      "Severe sepsis with septic shock, potentially from a source not immediately apparent",
      "Acute promyelocytic leukemia (APL) with coagulopathy and petechiae"
    ],
    "dangerous_alternatives": [
      "Severe sepsis with septic shock, potentially from a source not immediately apparent",
      "Acute promyelocytic leukemia (APL) with coagulopathy and petechiae"
    ],
    "challenge_statement": "The combination of headache, photophobia, neck stiffness, fever, and petechial rash raises concern for a life-threatening condition that may be missed if the focus is solely on bacterial meningitis or RMSF.",
    "requires_human_review": true
  }
},
{
  "agent": "Orchestrator",
  "output": {
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```

presents with symptoms suggestive of a serious infection, including fever, headache, and neck stiffness. The presence of a petechial rash is"

}

}

]